STEAM GENERATORS

TAC Nos.	Description
M88885	Steam Generator (SG) Integrity Rulemaking
M99432	GL: SG Tube Integrity
MA4265	NEI 97-06
MA5037	SG Action Plan
MA5260	DPO on SG Issues
MA7147	GSI-163
MA9881	Regulatory Issue Summary - IP2 SG Tube Failure
MB0258	SG Action Plan Administration
MB0553	SG Inspection Program
MB0576	Licensee SG Inspection Results Summary Reports & SG Tube Integrity Amendment Review Guidance
MB0631	SG Workshop
MB0633	OL No. 803 Revisions per SG Action Plan
MB0737	IIPB SG Action Plan Activities

Last Update: 12/31/01
Lead Division: DLPM
Supporting Divisions: DE, DIPM, DSSA
Supporting Office: RES

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
1.1 (MA9881)	Issue Regulatory Information Summary on SG Lessons Learned (TG: 8; page 2 of Ref. 2)	11/03/00 (C) ML010820457	DE E. Murphy	
1.2 (MA4265)	Discuss steam generator action plan and IP2 lessons learned with industry and other external stakeholders (TG: 2a-2o, 3a, 3b, 4a, 4b , 4c, 8)	12/20/00 (C) ML010820457	DE T. Sullivan R. Rothman	
1.3 (MB0258)	Subsequent to item 2, identify technical and management leads for each item and develop initial resource estimates	12/27/00 (C) ML010820457	DLPM R. Ennis	DE K. Karwoski DIPM D. Coe
1.4 (MB0258)	Brief management on resource estimates and invoke PBPM process as appropriate	12/27/00 (C) ML010820457	DLPM R. Ennis	DE K. Karwoski DIPM D. Coe

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
1.5 (MA5260)	Staff review of ACRS recommendations on DPO and develop detailed milestones and evaluate impact on other action plan milestones. Invoke PBPM process, as appropriate. (GSI-163 and DPO)	05/11/01 (C) ML011720125 ML011300073	DLPM R. Ennis	DE S. Coffin E. Murphy DSSA S. Long RES J. Muscara
1.6 (MA7147)	Determine GSI-163 resolution strategy and revise steam generator action plan milestones, as appropriate (GSI-163)	05/11/01 (C)	DE E. Murphy	
1.7 (MB0553)	Determine need to incorporate new steam generator performance indicators into Reactor Oversight Process (page 2 of Ref. 2; TG: 5e, 5f)	01/24/01 (C) ML010820457	DIPM D. Hickman	DE C. Khan E. Murphy DSSA S. Long
1.8 (MA4265)	Recommence work on NEI 97-06 (page 3 of Ref. 2; TG: 7)	01/31/01 (C) ML010820457	DE E. Murphy	
1.9 (MB0553)	Review NRC inspection program and, if necessary, revise guidance to inspectors on overseeing facilities with known steam generator tube leakage. (Attachment 3 to Ref. 1)	03/30/01 (C) ML010920112	DE L. Lund	DIPM DSSA S. Long
1.10 (MB0576)	Reassess the NRC treatment of licensee steam generator inspection results summary reports and conference calls during outages. Evaluate need for review guidance. (Attachment 3 to Ref. 1; TG: 6c; page 4 and 5 (top and bottom) of Ref. 1)	04/30/01 (C) ML011220621 ML013020093	DE S. Coffin	

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
1.11 (MB0553)	Review the NRC inspection program and, if necessary, revise guidance to inspectors on overseeing facility eddy current inspection of steam generators. This involves the following major substeps:			
	a) review and revise the baseline inspection program.	04/30/01 (C) ML011210293	DE C. Khan	DIPM DSSA S. Long
	b.1) review how ISI results/degraded conditions should be assessed for significance by a risk-informed SDP and define needed revisions to the SDP	09/21/01 (C) ML012680252	DSSA S. Long	DE C. Khan DIPM P. Koltay
	b.2) develop and issue draft revision of risk-informed SDP using information identified in b.1 above	02/28/02 (T)	DIPM P. Koltay	DSSA S. Long DE C. Khan
	c) review and revise the training program for inspectors		DIPM E. Kleeh	DE C. Khan
	c.1) Provide IP training material to Regions	10/11/01 (C) ML012970361		
	c.2) Formal training to inspectors	02/01/02 (T)		
	(Attachment 3 to Ref. 1; TG: 5a, 5b, 5c, 5d, 5f, 6c)			
1.12 (MB0576)	Determine need for formal written guidance for technical reviewers to utilize in performing steam generator tube integrity license amendment reviews (TG: 5c, 6a)	04/30/01 (C) ML011220621	DE S. Coffin	
1.13 (MB0258)	Staff provides EDO with update on status of action plan (page 8 of Ref. 1)	05/17/01 (C) ML011720125	DLPM R. Ennis	

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
1.14 (MA4265)	Staff completes review and prepares draft safety evaluation of NEI 97-06 including addressing issues raised in OIG report and IP2 lessons learned report (NEI 97-06, TG: 2, 3, 4, 7)	08/31/02 (T)	DE E. Murphy	
1.15 (MB0631)	Hold steam generator workshop with stakeholders (page 2 of Ref. 1; page 2 of Ref. 2)	02/27/01 (C) ML010820457	DE R. Rothman	
1.16 (MA4265)	Staff briefs CRGR on NEI 97-06 (NEI 97-06)	10/31/02 (T)	DE E. Murphy	
1.17 (MA4265)	Publish SE on NEI 97-06 in FR for public comment (NEI 97-06)	10/31/02 (T)	DLPM M. Banerjee	
1.18 (MA4265)	ACRS review of NEI 97-06 (NEI 97-06)	10/31/02 (T)	DE E. Murphy	
1.19 (Later)	Issue generic communication related to steam generator operating experience and status of steam generator issues	10/31/01 (C)	DE Z. Fu	
1.20 (MA4265)	Staff briefs Commission on endorsing NEI 97-06 (NEI 97-06, and WITS Item 199400048)	12/31/02 (T)	DE L. Lund	
1.21 (MA4265)	Staff issues endorsement package on NEI 97-06 in a safety evaluation and includes the approval of the generic technical specification change in a Regulatory Issue Summary	01/31/03 (T)	DE E. Murphy	
2.1	Evaluate the need for a new communication protocol with the U.S. Secret Service that would cover emergency situations at all NRC licensed facilities (Attachment 3 of Ref. 1)	12/05/00 (C) ML010460485 ML010820457	IRO F. Congel	
2.2 (MB0258)	Establish NRC web site for Steam Generator Action Plan	01/16/01 (C) ML010820457	DLPM R. Ennis	

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
2.3 (MB0258)	Review and revise, as appropriate, the policy for project manager involvement with the morning call between the resident inspectors and the region. (Attachments 3 and 4 of Ref. 1)	03/23/01 (C) ML011020026	DLPM R. Ennis	
2.4 (MB0737)	Review program requirements for routine communications between the resident inspectors and local officials based on public interest. Based on weighing current resident inspector responsibilities (e.g., inspection requirements, following up on plant events) against this review, revise program requirements if needed. (Attachment 3 of Ref. 1)	04/03/01 (C) ML010890426	DIPM T. D'Angelo	
2.5 (MB0737)	Develop, revise, and implement, as appropriate, a process for the timely dissemination of technical information to inspectors for inclusion in the inspection program (TG: 5g)	04/03/01 (C) ML010890426	DIPM G. Klinger	
2.6 (MB0258)	Incorporate experience gained from the IP2 event and the SDP process into planned initiatives on risk communication and outreach to the public (TG: 9) 1. Issue NRR input for incorporation into OEDO initiative 2. Address SRM dated 12/26/01	 02/28/02 (T) TBD	 PMAS M. Kotzalas TBD	
2.7 (MB0258)	Investigate possibility of establishing protocol with OIG regarding review of draft reports for factual/contextual errors (page 8 of Ref. 1)	06/18/01 (C) ML011720125	DLPM R. Ennis	

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
2.8 (MB0633)	Review and revise, as appropriate, the amendment review process, including concurrence responsibilities, supervisory oversight, and second-round requests for additional information. a. Issue OI LIC-101 b. Issue procedure for NRR and RES interactions (Attachment 3 of Ref. 1; TG: 6b, 6d, 6e; page 6 of Ref. 1)	8/31/01 (C) 02/28/02 (T)	DLPM M. Banerjee DLPM M. Fields	
3.1	In order to address ACRS comments on current risk assessments, develop a better understanding of the potential for damage progression of multiple steam generator (SG) tubes due to depressurization of the SGs (e.g., during a main steam line break (MSLB) or other type of secondary side design basis accident). (Pgs. 46, 8-12) (See Notes 4, 5, and 6) Specific tasks include: a) Perform thermal-hydraulic (T-H) calculations and sensitivity studies using the 3-D hydraulic component of TRAC-M to assess the loads on the tube support plate and SG tubes during main steam line break (MSLB). Perform sensitivity studies on code and model parameters including numerics. Develop conservative estimate of loads and evaluate against similar analyses.	12/31/02 (T)	RES J. Uhle	DSSA W. Jensen

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
3.1 (continued)	b) Perform T-H assessment of flow-induced vibrations during MSLB. Using the T-H conditions calculated during the transient, generate a conservative estimate of flow-induced vibration displacement and frequency assuming steady state behavior.	12/31/02 (T)	RES J. Uhle	DSSA W. Jensen
	c) Perform additional sensitivity studies as needed.	06/30/03 (T)	RES J. Uhle	DSSA W. Jensen
	d) Obtain information from existing analyses related to loads and displacements (axial, bending, cyclic) experienced by SG structures under MSLB conditions.	12/31/02 (T)	RES J. Muscara	
	e) Using information from tasks 3.1a, 3.1b, and 3.1d, estimate upper bound loads and displacements.	12/31/02 (T)	RES J. Muscara	DE E. Murphy
	f) Estimate crack growth, if any, for a range of crack types and sizes using bounding loads from task 3.1e in addition to the pressure stresses. Include the effects of TSP movement in these evaluations and any effects from cyclic loads.	12/31/02 (T)	RES J. Muscara	DE E. Murphy
	g) Estimate the margins to crack propagation for a range of crack sizes for MSLB types loads and displacements in addition to the pressure stress.	12/31/02 (T)	RES J. Muscara	DE E. Murphy
	h) Based on the margins calculated in task 3.1g over and above the bounding loads, decide if more refined TH analyses need to be conducted to obtain forces and displacements of structures under MSLB conditions.	12/31/02	RES J. Muscara	DE E. Murphy

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
3.1 (continued)	i) Conduct tests of degraded tubes under pressure and with axial and bending loads to validate the analytical results from above tasks.	06/30/03 (T)	RES J. Muscara	DE E. Murphy
	j) Conduct analyses similar to above with refined load estimates if necessary.	06/30/04 (T)	RES J. Muscara	DE E. Murphy
	k) Use information developed in tasks 3.1a through 3.1j to evaluate the conditional probabilities of multiple tube failures for appropriate scenarios in risk assessments for SG tube alternate repair criteria (ARC).	02/28/05 (T)	DSSA S. Long	DE E. Murphy RES J. Muscara E. Thornbury
3.2	Confirm that damage progression via jet cutting of adjacent tubes is of low enough probability that it can be neglected in accident analyses. (Pgs. 10-11) (See Notes 3 and 5) Specific tasks include:			
	a) Complete tests of jet impingement under MSLB conditions.	12/31/01 (C)	RES J. Muscara	DE E. Murphy
	b) Conduct long duration tests of jet impingement under severe accident conditions.	12/31/01 (C)	RES J. Muscara	DE E. Murphy
	c) Document results from tasks 3.2a and 3.2b.	12/31/01 (C)	RES J. Muscara	DE E. Murphy
3.3	When available, use data from the ARTIST program (planned in Switzerland) to develop a better model of the natural mitigation of the radionuclide release that could occur in the secondary side of the SGs. (Pgs. 12-13) (See Notes 3 and 5)	09/30/04 (T) See Note 2	RES R. Lee	DSSA S. Long

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
3.4	In order to address ACRS criticism of current risk assessments, develop a better understanding of RCS conditions and the corresponding component behavior (including tubes) under severe accident conditions in which the RCS remains pressurized. (Pgs. 46-47, 12-15) (See Notes 3 and 5) Specific tasks include:			
	a) Perform system level analyses to assess the impact of plant sequence variations (e.g., pump seal leakage and SG tube leakage).	09/28/01 (C) ML012720004	RES C. Tinkler	DSSA W. Jensen S. Long
	b) Re-evaluate existing system level code assumptions and simplifications.	03/31/02 (T)	RES C. Tinkler	DSSA W. Jensen S. Long
	c) Examine 1/7 scale data to assess tube to tube temperature variations and estimate variations for plant scale.	08/31/02 (T)	RES C. Tinkler	DSSA W. Jensen S. Long
	d) Perform more rigorous uncertainty analyses with system level code to address inlet plenum mixing by developing distribution functions for mixing parameters based on available data. Peer review.	12/31/02 (T)	RES C. Tinkler	DSSA W. Jensen S. Long
	e) Examine SG tube severe accident T-H conditions using computational fluid dynamics (CFD) methods. This includes the following:			
	e.1) Benchmark CFD methods against 1/7 scale test data.	08/31/01 (C) ML012750061	RES C. Boyd	DSSA W. Jensen S. Long

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
3.4 (continued)	e.2) Perform full scale plant calculations (hot leg and SG) for a 4 loop Westinghouse design. Evaluate scale effects.	03/31/02 (T)	RES C. Boyd	DSSA W. Jensen S. Long
	e.3) Perform plant analysis to address the effects on inlet plenum mixing resulting from tube leakage and hot leg orientation (CE design impact).	07/31/02 (T)	RES C. Boyd	DSSA W. Jensen S. Long
	f) Examine the uncertainty in the T-H conditions associated with core melt progression.	01/31/03 (T)	RES C. Tinkler	DSSA W. Jensen S. Long
	g) Perform experiments to develop data on inlet plenum mixing impacts due to SG tube leakage and hot leg/ inlet plenum configuration.	03/31/03 (T)	RES C. Tinkler	DSSA W. Jensen S. Long
	h) Perform a systematic examination of the alternate vulnerable locations in the RCS that are subject to failure due to severe accident conditions. This includes the following:			
	h.1) Evaluate the creep failure of primary system passive components such as pressurizer surge line and the hot leg taking into account the material properties of the base metal, welds, and heat affected zones in the presence of residual and applied stresses, in addition to the pressure stress, and the presence of flaws.	11/30/03 (T)	RES J. Muscara	DE E. Murphy DSSA S. Long
	h.2) Evaluate the failure of active components such as PORVs, safety valves, and bolted seals based on operability and “weakest link” considerations for these components.	11/30/03 (T)	RES J. Muscara	DE E. Murphy DSSA S. Long
	h.3) Conduct large scale tests if needed.	11/30/05 (T)	RES J. Muscara	DE E. Murphy DSSA S. Long

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
3.4 (continued)	i) Develop data and analyses for predicting leak rates for degraded tubes in restricted areas under design basis and severe accident conditions.	12/31/03 (T)	RES J. Muscara	DSSA S. Long DE E. Murphy
	j) Put the information developed in task 3.4i into a probability distribution for the rate of tube leakage during severe accident sequences, based on the measured and regulated parameters for ARCs applied to flaws in restricted places (e.g., drilled-hole TSPs and the unexpanded sections of tubes in tube sheets).	06/30/04 (T)	DSSA S. Long	DE E. Murphy RES J. Muscara
	k) Integrate information provided by tasks 3.4a through 3.4j and 3.5 to address ACRS criticisms of risk assessments for ARCs that go beyond the scope and criteria of GL 95-05 (e.g., ARCs that credit "indications restricted against burst") as well as dealing with other SG tube integrity and licensing issues (e.g., relaxation of SG tube inspection requirements).	02/28/05 (T)	DSSA S. Long	DE E. Murphy RES J. Muscara C. Tinkler E. Thornbury
3.5	Develop improved methods for assessing the risk associated with SG tubes under accident conditions. (Pgs. 47, 16-20) (See Note 5) Specific tasks include:			
	a) Development of an integrated framework for assessing the risk for the high-temperature/high-pressure accident scenarios of interest.	03/29/02 (T)	RES E. Thornbury	DSSA S. Long

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
3.5 (continued)	b) Development of improved methods for identifying accident scenarios (including MSLB) that lead to challenges on the reactor coolant pressure boundary.	06/28/03 (T)	RES E. Thornbury	DSSA S. Long
	c) Development of improved PRA models of the scenarios identified above, including the impact of operator actions and appropriate treatment of uncertainty.	06/28/03 (T)	RES E. Thornbury	DSSA S. Long
3.6	To address an ACRS report conclusion that improvements can be made over the current use of a constant probability of detection (POD) for flaws in SG tubes, RES has recently completed an eddy current round robin inspection exercise on a SG mock-up as part of NRC's research to independently evaluate and quantify the inservice inspection reliability for SG tubes. This research has produced results that relate the POD to crack size, voltage, and other flaw severity parameters for stress corrosion cracks at different tube locations using industry qualified teams and procedures. Complete analysis of research results and prepare topical report to document the results. (Pgs. 47, 33)	12/31/01 (C)	RES J. Muscara	DE E. Murphy

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
3.7	Assess the need for better leakage correlations as a function of voltage for 7/8" SG tubes. (Pgs. 48, 28-29) (See Note 5)	04/30/03 (T)	DE E. Murphy	RES J. Muscara
3.8	Develop a program to monitor the prediction of flaw growth for systematic deviations from expectations. (Pg. 48) (See Note 5)	1/3/02 (C)	DE J. Tsao	
3.9	Develop a more technically defensible position on the treatment of radionuclide release to be used in the safety analyses of design basis events. (Pgs. 48, 38-44) (See Note 5)			
	Specific tasks include:			
	a) Assess Adams and Atwood and Adams and Sattison spiking data with respect to the ACRS comments.	08/09/01 (C)	DSSA J. Hayes	
	b) Based upon the assessment performed in task 3.9a, develop a response to the ACRS comments.	02/28/02 (T)		
	c) Publish in the *Federal Register* for public comment, the response to ACRS' comments.	04/30/02 (T)		
	d) Complete review of public comments.	10/31/02 (T)		
	e) Based upon task 3.9d, determine if additional work needs to be performed.	08/15/02 (T)		

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
3.10	To address concerns in the ACRS report regarding our current level of understanding of stress corrosion cracking, the limitations of current laboratory data, the difficulties with using the current laboratory data for predicting field experience (crack initiation, crack growth rates), and the notion that crack growth should not be linear with time while voltage growth is, the following tasks will be performed: (Pgs. 20-29) (See last sentence in Note 3) Specific tasks include:			
	a) Conduct tests to evaluate crack initiation, evolution, and growth. Tests to be conducted under prototypic field conditions with respect to stresses, temperatures and environments. Some tests will be conducted using tubular specimens.	12/31/05 (T)	RES J. Muscara	DE E. Murphy
	b) Using the extensive experience on stress corrosion cracking in operating SGs, and results from laboratory testing under prototypic conditions, develop models for predicting the cracking behavior of SG tubing in the operating environment.	12/31/06 (T)	RES J. Muscara	DE E. Murphy
	c) Based on the knowledge accumulated on stress corrosion cracking behavior and the properties of eddy current testing, attempt to explain the observed relationship between changes in eddy current signal voltage response and crack growth.	12/31/05 (T)	RES J. Muscara	DE E. Murphy

Item No. (TAC No.)	Milestone	Date (T=Target) (C=Complete)	Lead	Support
3.11	In order to resolve GSI 163, it is necessary to complete the work associated with tasks 3.1 through 3.5 and 3.7 through 3.9. Upon completion of those tasks, develop detailed milestones associated with preparing a GSI resolution document and obtaining the necessary approvals for closing the GSI, including ACRS acceptance of the resolution. (See note 9)	12/31/05 (T)	DLPM J. Zimmerman	DE E. Murphy DSSA S. Long
3.12	Develop outline and a detailed schedule for completing DG 1073, "Plant Specific Risk-Informed Decision Making: Induced SG Tube Rupture (See note 9)	12/31/05 (T)	DE E. Murphy	DSSA S. Long

Notes:

1. For SG Action Plan milestones associated with the SG DPO (i.e., Item Nos. 3.1 - 3.11), the page numbers referenced in the milestone description indicate the source of the milestone as described in ACRS Report NUREG-1740, "Voltage-Based Alternative Repair Criteria." The ACRS report was included as an enclosure to a memorandum from D. Powers to W. Travers dated February 1, 2001 (Accession No. ML010780125).

2. With respect to milestone Item No. 3.3, the ARTIST program plan is being finalized for implementation. A firm testing schedule is not currently available but testing is expected to commence in 2002.

3. The work described in this milestone is related, in part, to previously planned work associated with an NRR User Need request dated February 8, 2000 (Accession No. ML003682135), and the associated RES response to the request dated September 7, 2000 (Accession No. ML003714399). In addition, portions of this work were undertaken on an anticipatory basis by RES.

4. The work described in this milestone is related, in part, to previously planned work associated with GSI 188, "Steam Generator Tube Leaks/Ruptures Concurrent with Containment Bypass."

5. The work described in this milestone is related, in part, to previously planned work associated with GSI 163, "Multiple Steam Generator Tube Leakage."

6. The thermal-hydraulic analyses (items 3.1a through 3.1c) will provide input into the tube integrity analyses (items 3.1d through 3.1j) on an on-going basis. The end dates for these two areas coincide because of the close integration between these two RES efforts. Also, the end dates reflect the target date for the final report documenting the RES findings.

7. Item Nos. 1.1 through 2.8 in the above table were developed from Attachment 1 of a memorandum from J. Zwolinski, J. Strosnider, B. Boger and G. Holahan to B. Sheron and R. Borchardt dated March 23, 2001 (Accession No. ML010820457). That memorandum provided a revision to the Steam Generator Action Plan that was originally issued via a memorandum from B. Sheron and J. Johnson to S. Collins dated November 16, 2000 (Accession No. ML003770259).

8. Item Nos. 3.1 through 3.11 in the above table were developed from Attachment 1 of a memorandum from S. Collins and A. Thadani to W. Travers dated May 11, 2001 (Accession No. ML011300073). That memorandum provided a revision to the Steam Generator Action Plan as requested by a memorandum from W. Travers to S. Collins and A. Thadani dated March 5, 2001 (Accession No. ML010670217).

9. The completion date assumes need for large scale test.

10. The ADAMS accession no. listed under "Date" is the closure document.

Description: Steam generator tube integrity issues continue to arise. As a result, many organizations within the NRC have evaluated portions of the regulatory process associated with steam generator tube integrity and have made some insightful observations and/or recommendations. To ensure safety from a steam generator tube integrity standpoint is maintained, that public confidence in the steam generator tube integrity area is improved, and the NRC and stakeholder resources are effectively and efficiently utilized, the steam generator action plan was developed. The action plan is intended to direct and monitor the NRC's effort in this area and to ensure the issues are appropriately tracked and dispositioned. The action plan is also intended to ensure the NRC's efforts result in an integrated steam generator regulatory framework (license review, inspection and oversight, research, etc.) which is effective, efficient, and realistic.

This plan consolidates numerous activities related to steam generators including: 1) the NRC's review of the industry initiative related to steam generator tube integrity (i.e., NEI 97-06); 2) GSI-163 (Multiple Steam Generator Tube Leakage); 3) the NRC's Indian Point 2 (IP2) Lessons Learned Task Group recommendations; 4) the Office of the Inspector General (OIG) report on the IP2 steam generator tube failure event; and 5) the differing professional opinion (DPO) on steam generator issues. The plan does not address plant-specific reviews or industry proposed modifications to the Generic Letter 95-05 (voltage-based tube repair criteria) methodology. The plan also includes non-steam generator related issues that arose out of recent steam generator related activities (e.g., Emergency Preparedness issues from the OIG report). The milestone table shown above is organized as follows:
- Item Nos. 1.1 through 1.21: SG-related issues (not including the DPO-related issues);
- Item Nos. 2.1 through 2.8: Non-SG related issues; and
- Item Nos. 3.1 through 3.11: DPO-related issues.

Historical Background: The NRC originally planned to develop a rule pertaining to steam generator tube integrity. The proposed rule was to implement a more flexible regulatory framework for steam generator surveillance and maintenance activities that allows a degradation specific management approach. The results of the regulatory analysis suggested that the more optimal regulatory approach was to utilize a generic letter. The NRC staff suggested, and the Commission subsequently approved, a revision to the regulatory approach to utilize a generic letter. In SECY-98-248, the staff recommended to the Commission that the proposed GL be put on hold for 3 months while the staff works with NEI on their NEI 97-06 initiative. In the staff requirements memorandum dated December 21, 1998, the Commission did not object to the staff's recommendation. In late 1998 and 1999 the NRC and industry addressed NRC technical and regulatory concerns with the NEI 97-06 initiative, and on February 4, 2000, NEI submitted the generic licensing change package for NRC review. The generic licensing change package included NEI 97-06, Revision 1, proposed generic technical specifications, and a model

technical requirements manual section. SECY-00-0078 outlines the staff's proposed review process associated with the revised steam generator tube integrity regulatory framework described in NEI 97-06.

Originating Document: Memorandum from B. Sheron/J. Johnson to S. Collins dated November 16, 2000, "Steam Generator Action Plan" (Accession No. ML003770259).

Regulatory Assessment: The current regulatory framework provides reasonable assurance that operating PWRs are safe. Improvements to the regulatory framework are being pursued through the NEI 97-06 initiative.

Current Status:

- November 1, 2000 Issuance of "Indian Point 2 Steam Generator Tube Failure Lessons-Learned Report" via memorandum from W. Travers to the Commission (Accession No. ML003765272).

- November 3, 2000 Issuance of "Staff Review of OIG Report on the NRC's Response to the Steam Generator Tube Failure at Indian Point 2 and Related Issues" via memorandum from W. Travers to the Commission (Accession No. ML003753067).

- November 16, 2000 Issuance of "Steam Generator Action Plan" via memorandum from B. Sheron/J. Johnson to S. Collins (Accession No. ML003770259).

- February 1, 2001 ACRS Ad Hoc Subcommittee report related to SG DPO issued (NUREG-1740).

- May 11, 2001 Issuance of a memorandum providing a revision to the SG Action Plan to address the issues related to the DPO on SG tube integrity issues (Accession No. ML011300073).

- August 2, 2001 Issuance of a letter to NEI transmitting a draft NRC paper on NEI 97-06 SG generic change package (Accession No. ML012200349).

- August 29, 2001 Public meeting between NRC ans NEI to discuss revisions to the proposed regulatory framework in NEI 97-06 (meeting summary: Accession No. ML012690666).

- September 18, 2001 Issuance of a memorandum with staff comments on SG inspection intervals proposed by the industry in NEI 97-06 (Accession No. ML012610664).

- September 21, 2001 Issuance of memorandum documenting completion of Item Nos 1.11.b.1 (Accession No. ML012680252)

- September 26, 2001 Staff briefing of ACRS subcommittee on Materials and Metallurgy regarding SG action plan status.

-September 26, 2001 Staff briefing of ACRS Subcommittee on Materials and Metallurgy on SG action plan.

-September 28, 2001 Issuance of memorandum documenting completion of Item Nos 3.4.a (Accession No. ML012750061).

- October 4, 2001 Staff briefing of ACRS full-committee on SG action plan status.

- October 18, 2001 ACRS letter to the Chairman documenting their comment on staff action plan to address the SG DPO (ML012960166).

- November 28, 2001 Public meeting between NRC and NEI management to discuss NEI 97-06 and TMI tube severance issues.

- November 29, 2001 Staff briefing of ACRS Subcommittee on Materials and Metallurgy on NEI 97-06.

- December 3, 2001 Staff briefing of the Commission on the status of SG action plan.

- December 06, 2001 Staff briefing of ACRS on NEI 97-06.

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